Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – April/May– 2017**

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| **Code :** | **14EE3040** | **Duration :** | **3hrs** |
| **Sub. Name :** | **SIMULATION OF POWER ELECTRONIC SYSTEMS** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| Q. No. | Sub Div. | Questions | Course  Outcome | Marks |
| 1. | a. | Infer the various control structures used in MATLAB. | CO1 | 15 |
|  | b. | Explain the operation of the following functions used in MATLAB  i. plot(x,y) ii. sind iii. Clear all | CO1 | 05 |
| (OR) | | | | |
| 2. |  | Write a MATLAB program for simulating a single phase AC voltage controller operating at the following ratings. V=230v, f=50Hz, 1 phase. Plot the voltage and current graphs for a 50 % output voltage. | CO1 | 20 |
| 3. |  | A 1kW load operating on a 1 phase 50 Hz 230V AC supply, requires a supply voltage that varies between 20 % and 80 % of the input. Plot the input voltage, output voltage, output current and the voltage across the control device. Recommend suitable power devices for the application. | CO2 | 20 |
| (OR) | | | | |
| 4. |  | Develop a 5 Level MLI using MATLAB/Simulink. Provide the timing diagram for the same along with the Pulse generator block properties. | CO2 | 20 |
| 5. |  | Explain with an example the procedure to perform FFT analysis in MATLAB / Simulink. | CO3 | 20 |
| (OR) | | | | |
| 6. | a. | Develop a matlab Simulink model to run a script file through a subsystem. | CO2 | 10 |
|  | b. | Elaborate the use of the following Matlab / Simulink blocks. | CO2 | 10 |
| 7. |  | Discuss about the Parameter sweep method of analysis that PSIM offers. | CO2 | 20 |
| (OR) | | | | |
| 8. |  | Construct the Simulink model for a three phase fully controlled converter with resistive load and explain the step by step procedure . | CO2 | 20 |
|  | | **Compulsory:** |  |  |
| 9. |  | Using PSpice schematic, develop a Class E resonant pulse inverter for 5kHZ. Draw the output Voltage characteristics. | C02 | 20 |

**ALL THE BEST**